REVERSING THE DECLINE IN INTERNAL MEDICINE

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INTRODUCTION

Let me open this presentation with a tribute to Bob Waldman (Figure 1). As you know, Bob died on July 10, 1993. I will not review his many accomplishments at Johns Hopkins, the University of Florida, the University of West Virginia, and the University of Nebraska. Let me just say a word about Bob's all too brief tenure at the AAMC where he served as Vice President for Medical Student and Resident Education.

When Bob came to the AAMC in the early fall of 1991, he took on as his principal responsibility the fields of graduate medical education and primary care. Bob felt that the primary care agenda was one on which the Association should concentrate, and he played a leading role in the consensus process which led to the action of a primary care task force and that ultimately led to the primary care position for the Association.

In the spring of 1992 Bob was discovered to have a serious life-threatening disease. As one who counseled with him as he considered his diagnostic and treatment options, I learned first hand of the rational way in which he approached the potential consequences of his decisions. I also learned of his indomitable courage as he went through part of the interleukin protocol, which made him dreadfully sick, and then ultimately faced a treatment program a long way from home.

The best description of Bob is that he was a gritty, gutsy man who for more than a year persevered against terrible odds. We salute his memory, and take this opportunity to express our sorrow and respect.

One of Bob's great concerns was the extent to which the general internist should play a role in primary care because part of internal medicine's failure to produce enough generalists may be a lack of commitment to this role. There are two reasons why we might argue that general internal medicine's role in addressing the primary care shortage should be less than in the past. First, it used to be that general internists were considered unique because of the depth of their knowledge of both simple and complex adult diseases. However, the

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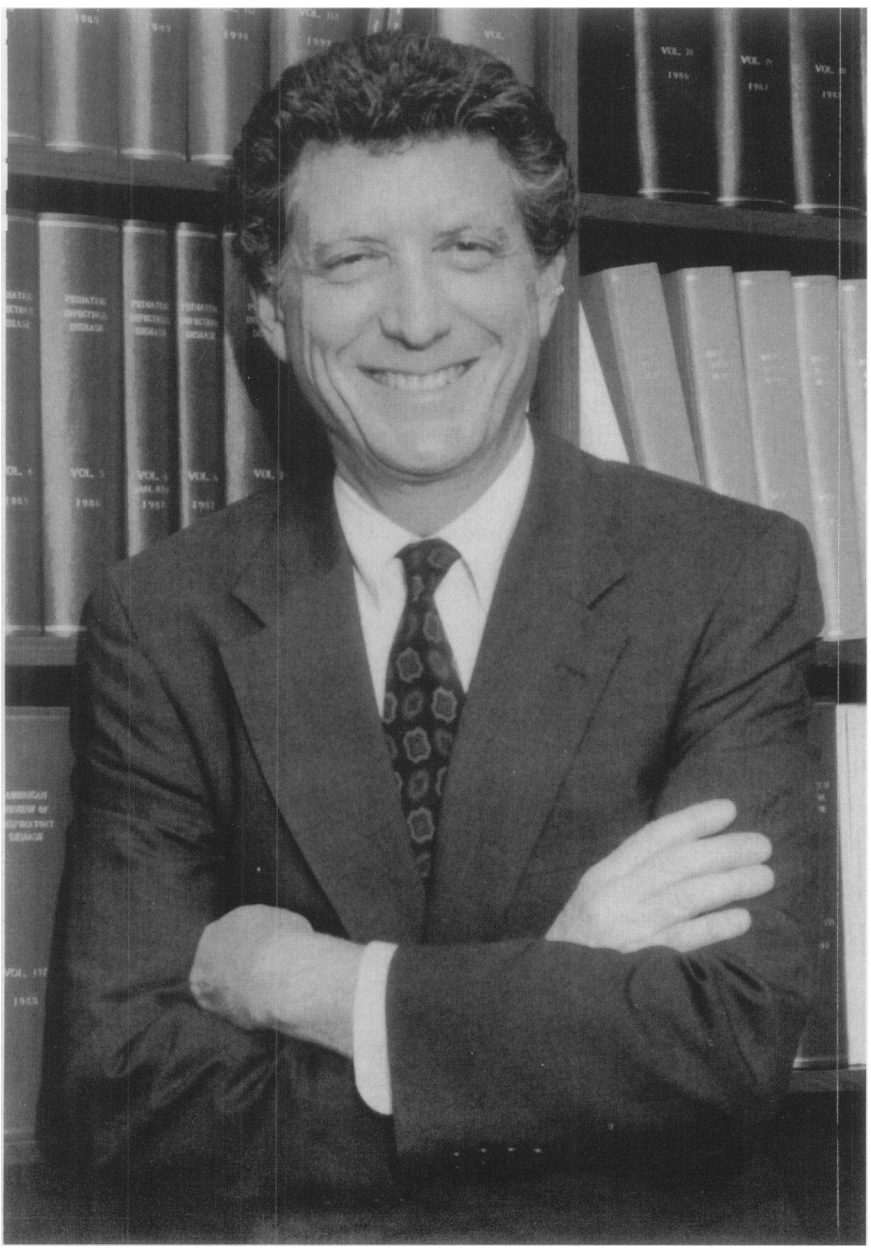


FIG. 1. Dr. Robert H. Waldman.

medical knowledge base has grown to such daunting proportions that it seems impossible for any one doctor to master it all or even part of it. The knowledge base simply may have outstripped the general internist (1).

Second, the increasing visibility of family medicine may have undermined, to a significant extent, internal medicine's commitment to its role in primary care. Family medicine has set as its goal producing half of the nation's primary care physicians, and it has pursued this goal with more single-mindedness, vigor and political finesse than internal medicine has pursued its own more tentative manpower goals. This year's National Residency Matching Program shows that 238 more U.S. graduates matched to family practice residencies than last year—suggesting that the small increase that we saw last year may be the beginning of an upward trend (2). This recent success of family medicine relative to internal medicine, which lost nearly as many recruits as family medicine gained, may reflect a sentiment on the part of students that family medicine, with its emphasis on breadth rather than depth, may be better qualified to provide primary care—and that internists are best used as consultants.

It is my strong belief, however, that the general internist continues to be the best primary care physician for adults. He or she has had three times as much training in internal medicine as a family practitioner, and knows much more about its subspecialties. In addition, the general internist is more adept at complex, multi-system disease, and more at home in dealing with very sick people. Internal medicine should renew its commitment to generalism.

MANPOWER GOALS

The internal medicine establishment has made a verbal commitment to generalism: the Association of Professors of Medicine, the American College of Physicians, and the Federated Council of Internal Medicine have joined the quasigovernmental Council on Graduate Medical Education (COGME), the American Academy of Family Practice, and the Association of American Medical Colleges in advocating that half of U.S. graduating seniors should become general internists, general pediatricians, and family physicians (3–5). In order for internal medicine to contribute its share of the nation's ideal supply of primary care doctors, 50% of internists should become general internists and 18% of all American physicians should be general internists. Unfortunately, this goal has not been reached. On the contrary, I will show you some numbers demonstrating that we are actually going in the wrong direction.

The fact is that we are nowhere near meeting our manpower goals, as is demonstrated by the AAMC's Institutional Goals Ranking Report (6). Let me explain this report briefly. The AAMC tracked the 1987 cohort of American medical school graduates through the PGY-4 year. Internal medicine residency graduates who were not in fellowship programs in PGY-4 year were usually practicing general internal medicine.

According to this study, the cohort of 1991 included 1,502 general internists who had graduated from American medical schools (Table 1). This is 37% of all American graduates entering primary care, which, I believe, is about the right proportion. However, it is only 9.5% of all American graduates, which is too low. It also falls short of the goal of 50% of internists becoming generalists. The study did not include FMGs, but if we assume that FMGs entered general internal medicine in proportion to their representation as PGYs-1, then internal medicine turned out 1,951 general internists altogether. This is 922 individuals and 16% short of the 50% goal (Table 2). To meet our goal, we would have had to turn out roughly half again the number of general internists.

The results of the 1992 AAMC Graduation Questionnaire are the most disturbing indication of the plummeting interest in general internal medicine (Table 3) (7). According to the questionnaire responses, only 3.2% of medical school students graduating in 1992 were contemplating careers in general internal medicine. Just ten years ago, this percentage was 14.4. If this trend continues, the nation's supply of general internists will be almost completely depleted in the not too distant future.

Manpower problems are not limited to the shortage of general internists. Graduates of American medical schools are increasingly showing less interest in internal medicine as a whole. If we look at res-

TABLE 1
*1987 Graduates of U.S. Medical Schools Who Entered Practice in Generalist Specialties**

Specialty	No.	% of all Generalist	% of all Graduates
Family Practice	1,800	44.4	11.4
General Internal Medicine	1,502	37.1	9.5
General Pediatrics	749	18.5	4.7
Total Generalist Graduates	4,051	100	25.6
Total Graduates	15,797	—	100

*Source: AAMC 1992 Institutional Goals Ranking Report.

TABLE 2
1987 Graduates Completing Residencies in Internal Medicine and Entering Careers as Generalists: Comparison to Manpower Goals*

	No.	% of all Graduates Entering IM
USMGs Becoming Generalists	1502	26
**FMGs Becoming Generalists	449	8
Total Graduates Becoming Generalists	1951	34
Goal	2873	50
Shortfall	922	16

*Source: AAMC 1992 Institutional Goals Ranking Report.
**Estimated From Data From: Andersen, Ann. Int. Med. 117:245, 1992.

idency match data, we see that internal medicine has increased its number of slots by over 1100 in the last decade; however, the number of matching American graduates has decreased slightly and the percentage of positions filled by U.S. graduates has fallen sharply to only 57% in the 1993 match (Table 4).

Foreign medical school graduates are an increasingly important source for filling internal medicine residencies (Figure 2). In 1992, the PGY-1 cohort in internal medicine included 3227 FMGs, and these comprised 37% of the total group. This represents more than a twofold increase in number in just six years. However, despite the increase in the number of FMGs during this period, the total match rate for internal medicine fell by four percentage points.

The allegiance of young people is shifting from general internal medicine to other specialties and to the subspecialties of internal medicine. This is manifested by the growth in fellowship training programs (Table 5) (8). Table 5 depicts both the absolute number of fellows in training and their rate of growth during the past three years. The total

TABLE 3
*Percentages of Medical School Graduates Who Contemplated Careers in Generalist Specialties, by Specialty, 1982 and 1992**

	% All Physicians	
Specialty	in 1982	in 1992
Family Medicine	15.5	9.0
General Internal Medicine	14.4	3.2
General pediatrics	6.2	2.4
Total	36.1	14.6

*Source: AAMC Graduation Questionnaire, 1982 and 1992.

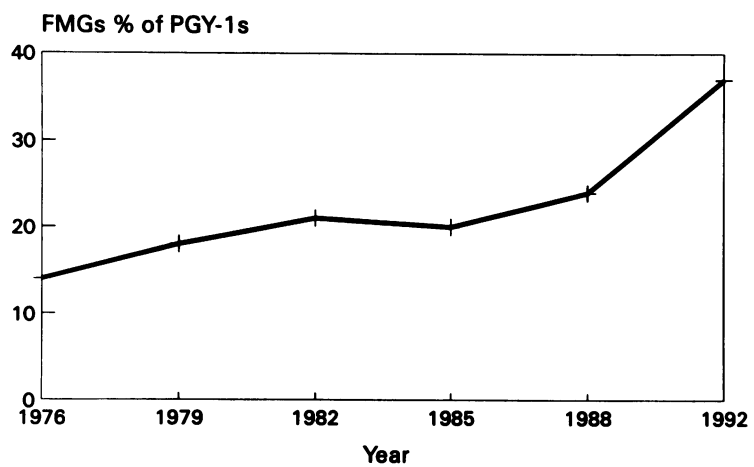
TABLE 4
Total Internal Medicine in NRMP

Year	Positions	US Match	% US	% Total	Empty
1983	6276	4511	72	86	861
1985	6736	4997	74	91	640
1987	7076	4781	68	82	1249
1989	7467	4744	64	80	1467
1991	7403	4458	60	78	1662
1993	7409	4228	57	83	1269

growth rate for all the fellowship programs was 19%, despite decreases in a few smaller fellowship programs. Some of this growth may be due to lengthening of programs, but much of it is due to expansion. General internal medicine is also attracting more fellows, but its growth rate has been less than half the average.

More importantly, the growth in fellowships has been at the expense of general internal medicine residencies. In comparison to the average growth of 19% demonstrated by fellowship programs, the total number of enrollees in internal medicine residency programs has grown by

Increase in FMGs as a Percentage of PGY1s in Internal Medicine*



* Data from: Andersen, Ann. Int. Med. 117:245, 1992
Lyttle, Personal Communication

FIG. 2. Increase in FMGs as a Percentage of PGY-1s in Internal Medicine.

TABLE 5
*Fellows in Training 1992–93**

Subspecialty	No. Fellows	% ↑ from 89–90
Cardiology	2627	28
Pulm. Dis.	1139	21
GI	1128	28
Heme/Onc, Heme, Onc.	1179	1
Nephrol	707	9
ID	785	34
Endo	465	−6
Rheum	442	11
A-I	223	49
Geriatrics	230	−9
Crit. Care	387	108
GIM	173	9
Pharm	64	−36
Nutrition	11	−61
Total	9560	19

*Courtesy Center of Health Administration Studies, University of Chicago.

only about 5%, and in categorical programs by only 2% (9). These results indicate that the proportion of PGY-3's going into fellowship training is increasing relative to that entering general internal medicine.

Another way to look at the flight into the subspecialties is to examine the number of certificates in general internal medicine and the subspecialties conferred by the American Board of Internal Medicine (10). Table 6 shows the percent by which the number of certifications increased in various subspecialties over the past decade. When the new subspecialties are included, the total number of individuals certified in the subspecialties increased by 225% in the last decade, while the number of individuals certified in general internal medicine increased by only 172%. Although the cohorts are not in temporal sequence, the data suggest that during this period fully 69% of the individuals who were certified in general internal medicine were also certified in a subspecialty.

Despite over a decade of energetic discussion about turning out a greater proportion of general internists, the subspecialization rate has remained fairly constant, as Table 7 from the National Study of Internal Medicine Manpower shows. According to these data, the subspecialization rate of the PGY-3 cohort is about 68%. Based on the fellowships and certification data, we must argue that at least two thirds of all internists in training enter a subspecialty.

Why are young physicians selecting the specialties and subspecialties over general internal medicine? Medical students who responded

TABLE 6
*American Board of Internal Medicine Certifications, 1983–92**

	No. Certified	Increase in Ten Years (%)
General Internal Medicine	48,779	172
Subspecialty		
Cardiovascular	7,119	210
Clin. Cardiac Electrophysiology	384	—
Critical Care	4,150	—
Endocrinology	1,348	180
Gastroenterology	3,706	210
Geriatrics	4,112	—
Hematology	1,489	170
Oncology	3,019	224
Infectious Disease	1,839	247
Nephrology	1,803	187
Pulmonary Disease	3,378	203
Rheumatology	1,463	196

*Courtesy American Board of Internal Medicine.

to the AAMC Graduation Questionnaire indicated that the main reasons they were not interested in practicing general internal medicine stemmed from a negative clerkship experience, the perception that the specialty was too demanding, and a dislike for the type of patient with whom general internists deal. The hostile practice environment, including the notorious hassle factor, adds to internal medicine's negative image.

The trend toward specialization and away from general internal medicine, as well as some of the ways the practice environment accelerates this trend, has several consequences: first, the excessive number of specialists in our country means that some specialists cannot find enough work to keep themselves competent in certain procedures.

TABLE 7
*Subspecialization in Internal Medicine**

Year	Subspecialization Rate (%)
1982	63
1984	62
1986	58
1988	60
1990	63
1992	68

*Courtesy National Study of Internal Medicine Manpower (C. Lyttle, Personal Communication).

In response to an inadequate workload and patient demand, many provide generalist care for which they may have trained many years previously and for which they have little enthusiasm. Second, a specialist-dominated system leads to the excessive use of procedures and ultimately to more expensive care. Third, the shortage of generalists means that many people, particularly in rural and inner city areas, do not have access to primary and preventive care.

The lack of a coherent physician manpower policy has resulted in higher costs and limited access, a state of affairs that is no longer tolerable to the American public. These are the major factors that have forced our country to the brink of comprehensive health care reform. The question is no longer whether we should turn out more generalist physicians, but rather who is going to force us to do it. The future of internal medicine now turns largely on this question.

I continue to believe that the nation's health manpower problems can be addressed most effectively from within academic medicine, and would argue that academic medicine has an obligation to assume this responsibility. As one of the primary care specialties, and the specialty that continues to attract one third of trainees and that encompasses from one-fifth to one-quarter of the faculty at most institutions, internal medicine should take a leading role in this effort.

What can we do to make the medical school environment more friendly to primary care (11)? In general, students' exposure to the generalist specialties should be greater and more valued within the medical school experience.

- Medical schools should devote significant portions of their curricula to generalist and ambulatory experiences, and enlist the teaching expertise of community-based generalists.
- Students should be exposed to strong generalist role-models and mentors, and to this end, medical schools should provide appropriate academic recognition for such teaching and role-modeling.
- Generalists should be offered, and be encouraged to accept, prominent positions within academic medicine as chairpersons, deans, and members of administrative and curriculum planning bodies, including admissions committees.
- Medical schools should strengthen their primary care departments and their divisions of general internal medicine.
- Financial incentives such as loan forgiveness should be established to encourage generalist careers among medical students.
- Perhaps most importantly, faculty must change their attitude toward primary care and cease deprecating careers in the primary care specialties.

I believe these changes would greatly increase medical students' interest in the primary care specialties. However, significant changes must be made in graduate medical education as well:

- First, the American Board of Internal Medicine and other specialty boards should put a stop to the current epidemic of what I have called "certifimania" (12). I have questioned the appropriateness of many CAQs, including transfusion medicine, sports medicine for internists, and the joint certificate between internal medicine and psychiatry. The proliferation of subspecialty boards gives enhanced standing to subspecialties and will naturally lead to more subspecialization.
- Second, we should increase the number and size of primary care tracks, because there is good evidence that more graduates of primary care tracks actually enter general internal medicine. These tracks are often self-designated and not separately accredited. The Association of Professors of Medicine and Program Directors in Internal Medicine should clearly designate primary care tracks, and obtain separate NRMP numbers for them.
- Third, Divisions of General Internal Medicine should be strengthened. While Divisions of General Internal Medicine have vastly improved their research and fellowship training programs, they could do even better, particularly in mentoring and supervising research fellows. More importantly, Divisions of General Internal Medicine should turn out more community practitioners. At present, about half of general internal medicine fellows remain in academic medicine.
- Equally important, both the size of categorical internal medicine residency programs and subspecialty fellowship programs should be reduced. This is a painful prescription, because house-staff constitute relatively inexpensive labor, and also because the indirect medical education (IME) formula increases payments to hospitals as the ratio of interns and residents to beds increases. Downsizing is necessary. There are presently 30% more residents than graduates of U.S. (LCME-accredited) medical schools, and to the extent that filling these positions requires importing FMGs who will eventually enter an already overcrowded work place, the surplus is potentially harmful.

I believe that internal medicine can meet the goal of turning out 50% generalists if it adopts the following three policies:

- First, limit the number of categorical PGY-1 positions to 110% of the number of applicants who are graduates of LCME-accredited medical schools.

- Second, reduce the number of fellowship positions by 5.6% a year for seven years.
- Third, retain fellowship stipends within departments of medicine and shift these resources into general internal medicine residencies, to accommodate an expanding second and third-year residency cohort.

It is my hope that internal medicine will adopt these or similar policies, thereby preempting the need for heavy-handed government intervention.

Let me conclude: at this point in time, the future of internal medicine could go one of two ways. Internal medicine could continue to respond ineffectively to the nation's manpower needs, and to persist in its overproduction of subspecialists. If this happens, I am certain that the federal government will soon assume a role in manpower planning that will compromise the autonomy of internal medicine, and I would not be surprised if this happens in the context of comprehensive health care reform. Or if the market is allowed to prevail, internal medicine will lose its franchise to provide generalist care to family physicians and nurse practitioners.

On the other hand, if internal medicine chooses to renew its commitment to generalism and to pursue that commitment aggressively, then it will reap three benefits. First, it will salvage internal medicine's position of power and leadership in academic medicine, perhaps in the context of a cooperative venture with the government. Second, it will bring back the general internist, whom I consider to be the most appropriate clinician for adults. Third, we will once again have the right to consider ourselves responsive to the needs of patients.

That is the outcome that Bob Waldman would have wanted.

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DISCUSSION

Dr. Rogers, New York: Bob, it seems to be one crime that I feel I helped perpetuate and you are continuing is to use the terms primary care and generalist interchangeably. When we started on this route, we began to play with the fact that perhaps what was primary care was really easy. It could be done by pygmy doctors, who didn't need much training. I think that shift not only resulted in the features that you've mentioned, but rather than putting the generalists at the top of the pecking order, we put them way down at the bottom. That is unattractive for students. I continue to feel if we, in essence, said that the generalist is at the top of the hierarchy, we would be better off.

Dr. Petersdorf: In many house staff programs the problem that we have noticed, however, is that not all the people that come in saying they want to go into general internal medicine, in fact, finish with that determination. Working with them in the clinic, and pressing some of the people that I know had an interest in general internal medicine, showed them going into pulmonary or one of the other top-earning subspecialties. I do not know how typical this is of institutions in general. Over and over again as residents express their interests in going into general internal medicine, they hear from attendings in a variety of settings comments like, "You're much too smart to go into general internal medicine. Why would you want to waste your talents on primary care?" If you hear that enough times from the folks that are your mentors on the wards and attendings in the clinics and in the subspecialties, you get the message. You find yourself drawn in other directions. We have lost people who came in with that kind of commitment.

Dr. Rogers: That, in fact, expresses my concern about whether or not getting people in medical school interested in internal medicine is going to cope with the problem, precisely because there are other pressures in the educational environment to move in other directions. So, the question is whether your eighth recommendation which dealt with the issue of changing existing faculty attitudes toward good house staff going into primary care can ever be implemented. How, in fact, do you effect that change? It is quite a challenge.

Dr. Petersdorf: One of the most interesting points that Jack Stobo made today was that when, as part of the NaSIMM study, they queried specialty program directors about their specialty, the least important thing that specialty program directors considered in appointing fellows was how many people are out there. The size of a fellowship program has been equated with quality in many instances. I think that it will take a major reorientation on the part of subspecialty fellowship program directors not to clone themselves. It takes a lot of pushing from the chairman and it takes a lot of pushing from the dean and it should take the issue of remuneration off the table. Don Seldin and I debated this question almost 100 years ago. He made the point then, as he still does, that if we only took away the financial differentials between the high-earning specialties and the generalist specialties, the generalists would do better. I am not sure about that. There are still a lot of people going into rheumatology and they make less money, or at

least not much more, than the general internist. I think there has to be an equating of income but there also has to be a change in faculty culture. I can give you one suggestion that I have seen in a few departments of medicine. I call that the "hub and spoke" concept. The division of general internal medicine is the largest, does the most rounding, has the most impact on the house staff, and the specialists are really doing what they should do: consult and do procedures in their specialty. When that happens, most of your attendings are general internists, most of your clinic physicians are general internists, and the critical mass that most divisions of general internal medicine now do not have will become apparent. As I say, I have only seen that two or three times. We have these huge internal medicine faculties. Maybe we ought to begin to turn them around by appointing more generalists and fewer specialists.

Dr. Kern, Denver: Bob, I was interested in your list of reasons why students and residents do not choose general internal medicine. It was prominent that they perceived general internal medicine as being unattractive. In your list of remedies, you didn't mention ways of making it more attractive. I'd like to hear your reaction to that.

Dr. Petersdorf: Well, I think that one needs, among other things, faculty, including faculty in practices, who are successful and happy as general internists. The big problem is that there are a lot of unhappy general internists and for many of them their unhappiness does not have much to do with practice in general internal medicine, but their unhappiness has to do with the terrible hassles of practice. I did not include the "hassle factor" in this talk because of time limitations. If you study what makes general internists unhappy, a questionnaire put out by the College in the last year showed that the source of their unhappiness is the external circumstances under which they work. They work harder, they get paid less and they are hassled to death. They transmit that to the residents and to the students. I think it really is a question of education, Fred. I think it is a question of less proselytizing by the subspecialties and more proselytizing by general internal medicine and also by altering the external environment.

Dr. Kern: I really don't want to sound heretical, but I think that general internal medicine as seen inside the average university hospital is unattractive. We talked this morning about the decreasing role of in-patients in training physicians. The really exciting patients that attracted us to internal medicine don't get admitted to the hospital. Have you given thought to this?

Dr. Petersdorf: I think we have all given thought to it and there is improvement in the ambulatory training situation in many of our academic medical centers. But there isn't enough of it and we haven't figured out a way to pay for it yet. That is one of the really big problems that Jack Stobo also alluded to, but he also didn't tell us how to pay for it.

Dr. Kern: Do you think we ought to consider moving some of the training into the physician's office?

Dr. Petersdorf: Absolutely, and that's happening, Fred, in a number of institutions.

Dr. Odell, Salt Lake City: You were, of course, addressing the situation in the nation as a whole, but I think that there are possibilities of changing it. About 14 years ago, we created in Utah the general medicine teams. We only have four teams to train residents and two of those are general medicine teams. They account for about half of the admissions to the hospital. Every patient that is admitted that doesn't have a physician isn't put under the care of a subspecialist but he is put under the care of a generalist. That has greatly advanced the view by our residents of general internists. They use the other subspecialists as consultants. We have about half of our program as out-patient teaching, which is largely general internal medicine. We have three and one-half months of geriatrics training, which is the highest in the country. As a result, about 45% of our residents go into the practice of general internal medicine. Our general internists are

highly regarded. On the pay side, we have equalized that by disproportionately using our small percent of state funds for teaching. So I supplement the general internist and I don't supplement the cardiologist, the gastroenterologist and so forth. Everybody is on the same pay scale. I think it works out pretty well.

Dr. Petersdorf: Well, Bill, I heard you tell us that story before. I admire it greatly and I think more departments ought to be doing it.

Dr. Luke, Cincinnati: I'd like to defend the Association of Professors in Medicine and the chairmen of medicine. I don't think most places, perhaps outside Boston, are hearing this from the chairmen of medicine, this business of "don't go into general internal medicine." I speak as someone whose biggest division is general internal medicine. What we are advising in most instances, if you really want to go into cardiology or pulmonary and you really want to do it, then do it, but otherwise stay in general internal medicine. Take a fourth year, get some other experiences. I think that we have made a definite change but it hasn't gotten through to the subspecialty directors yet. Finally, you are absolutely right, 95% of the problem is the pay mechanism.

Dr. Petersdorf: Thank you very much. I always said that the chairmen's hearts are in the right place; it's just that the money is in the pockets of the subspecialty directors.